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TOP SECRET ATOMIC

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1. The attached table sets out a possible warhead requirement as postulated by Ministry of Defence and the manner in which it can be met related to the estimated annual and accumulated availability of material from A.E.A., C.E.G.B. and the U.S.

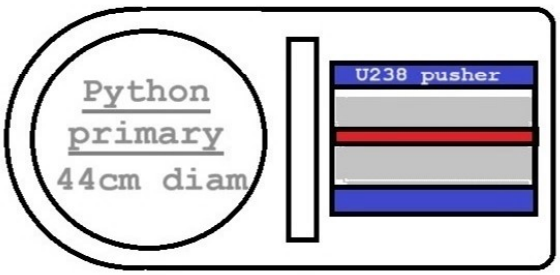
2. The quantities of material taken for each type of warhead are as follows:

		Pu kg	U kg	Li^6 kg	Tritium (grams) AN gm	
B28 primary = 65kt						
1600 lb. B28	Red Snow Mt	1.6	11	16	2.54 to 2.49	1.1 Mt B28
	Red Snow Kt	1.6	11	0.6	2.54 to 2.49	B28
150lb. W44	Tony	2.25	1.4		6.0	Tsetse =10kt when boosted (assuming PBX 9404)
100lb.	Low Tony	0.9	5.6	(0.084kt)		
75 lb. W54	Wee Gwen	1.6	2.42	(0.02kt Davy Crockett)		
200lb.	UNA	1.26	12	.75 or 2.7	(50 or 100kt)	
700lb.	Mk. 47 =400kt	2.5	(60)	36	4.0	

Yield data in red is from UK National Archives: AB 16/3240 A1164 p2, Atomic warheads production committee: general correspondence, 1958-66

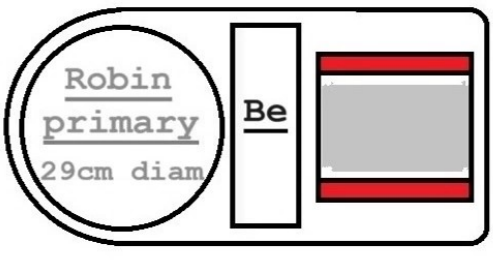
SOURCE (of main document above): National Archives, AB 16/4675 p63 of UKAEA Atomic Warheads Production Cttee, Papers and Minutes, 1964 (released in 2010).

FROM: http://nuclear-weapons.info/images/tna-ab16-4675p63.jpg



B28: 1.1 Mt, **1600 lb.**
20" diameter, 49" long
U235 spark plug (red)

Very heavy, cheap bomb
(Only 11 kg of U235!)
(Only 16 kg of Li6!)

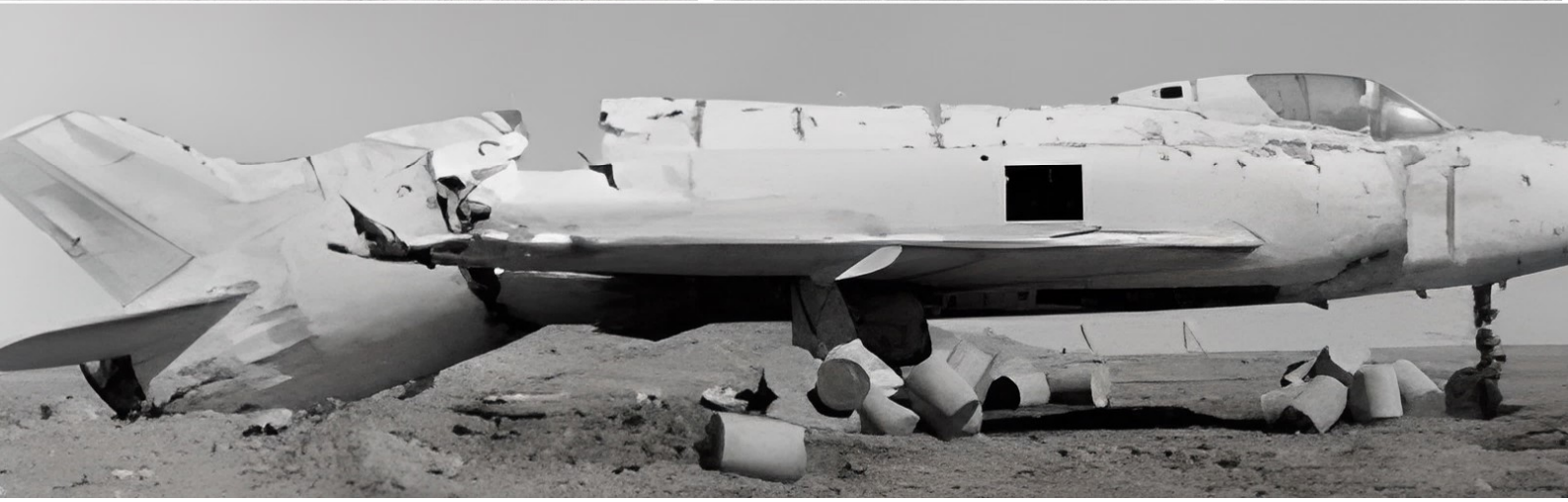


W47: 400 kt **700 lb.**
18" diameter, 47" long
U235 pusher (red)

Low mass SLBM warhead
(60 kg of U235!)
(36 kg of Li6!)

Operation Antler, Maralinga, 1957.
Nuclear blast effects on personnel (dummies) in cars

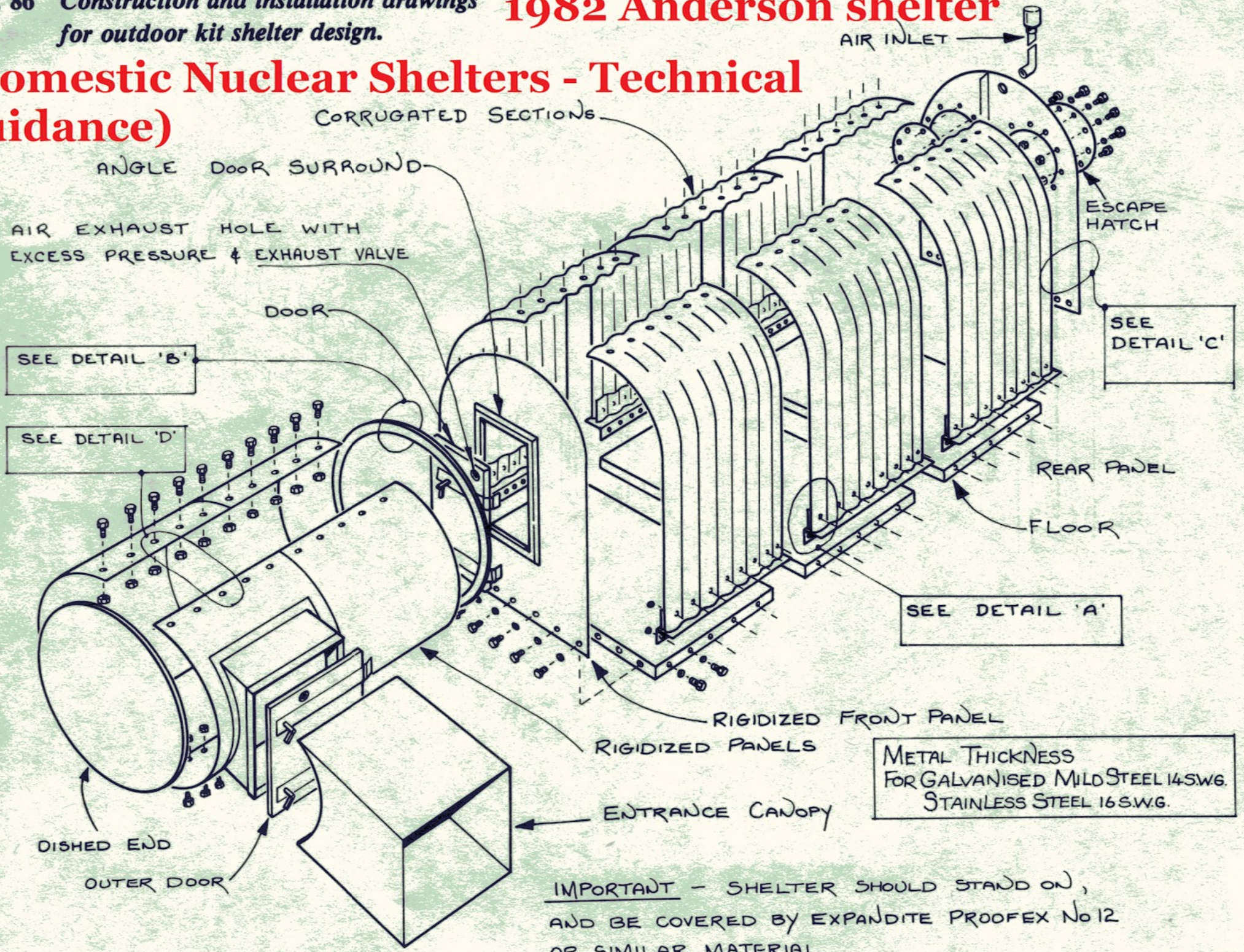
Operation Antler, Maralinga, 1957.
Dummies - standing and prone - with cine camera blast effect filming system



1982 Anderson shelter

(Domestic Nuclear Shelters - Technical Guidance)

Fig. 86 ***Construction and installation drawings for outdoor kit shelter design.***



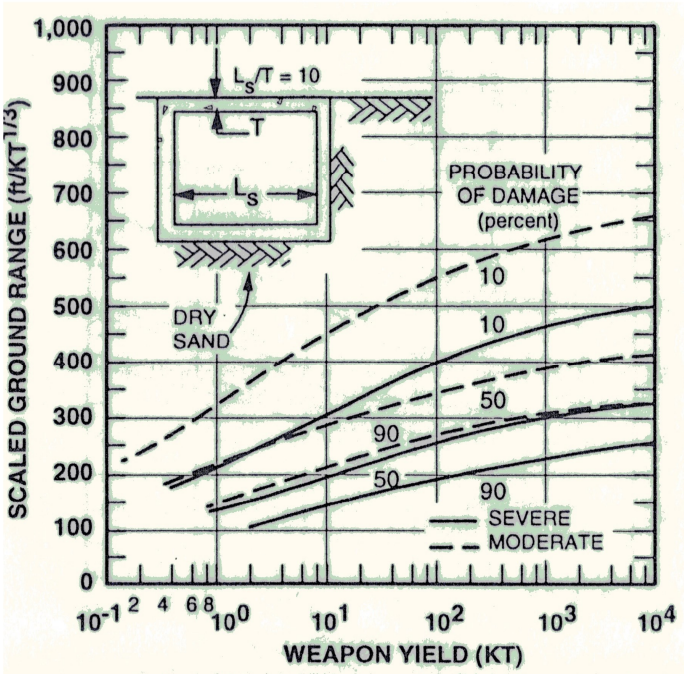


Figure 15.43. Vulnerability Curves for a Flat-Roofed Structure, Aspect Ratio $L_s/T = 10$ (Structure Category 15.3.11) Surface-Flush in Dry Sand.

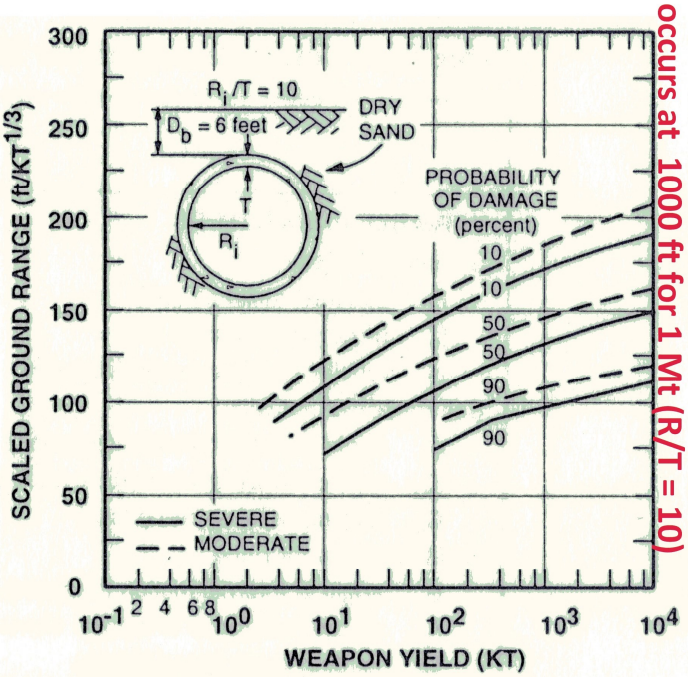


Figure 15.52. Vulnerability Curves for a Horizontal Cylinder, Aspect Ratio $R_i/T = 10$ (Structure Category 15.3.18) Buried in Dry Sand.

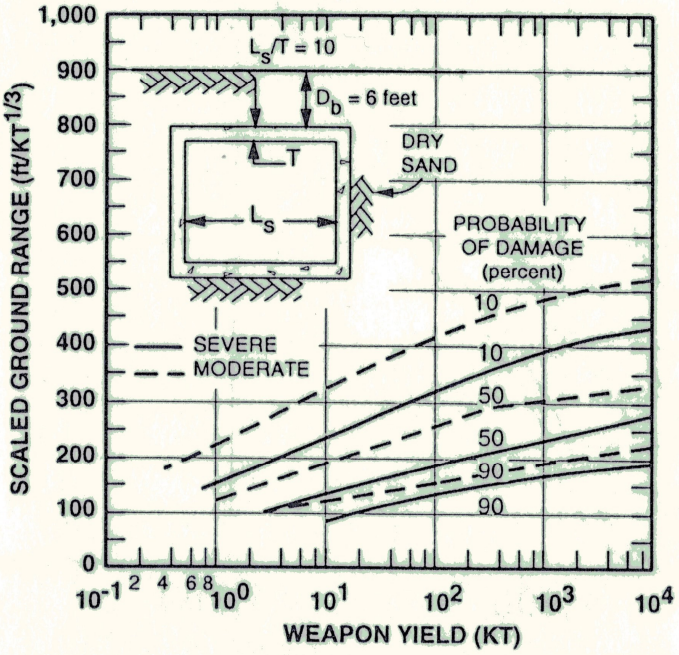


Figure 15.35. Vulnerability Curves for a Flat-Roofed Structure, Aspect Ratio $L_s/T = 10$ (Structure Category 15.3.3) Buried in Dry Sand.

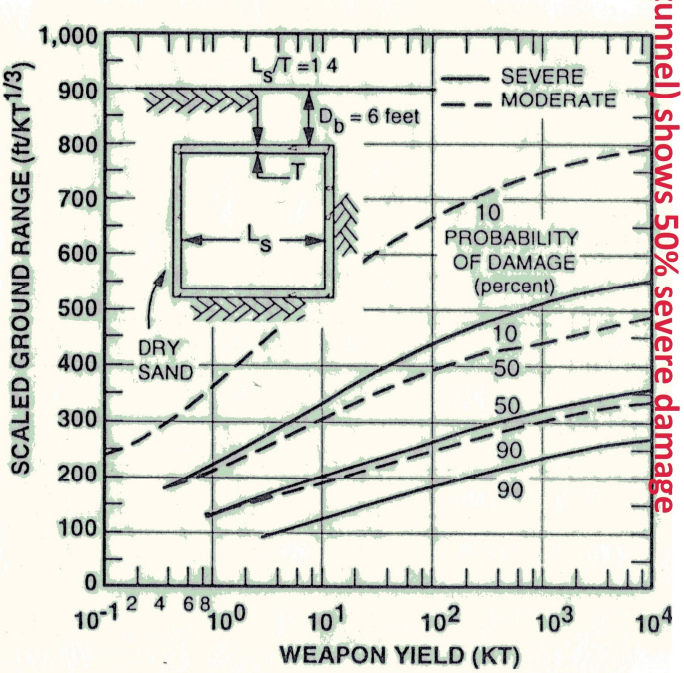


Figure 15.36. Vulnerability Curves for a Flat-Roofed Structure, Aspect Ratio $L_s/T = 14$ (Structure Category 15.3.4) Buried in Dry Sand.

Data from two underground tests of different yields, converted to surface bursts on the assumption that the ground shock/cratering coupling for the surface burst is 5% that for underground bursts (Northrop, 1996, p552)

4500 psi concrete strength. Fig 15.60 for a vertical silo (tunnel) shows 50% severe damage occurs at 1000 ft for 1 Mt (R/T = 10)

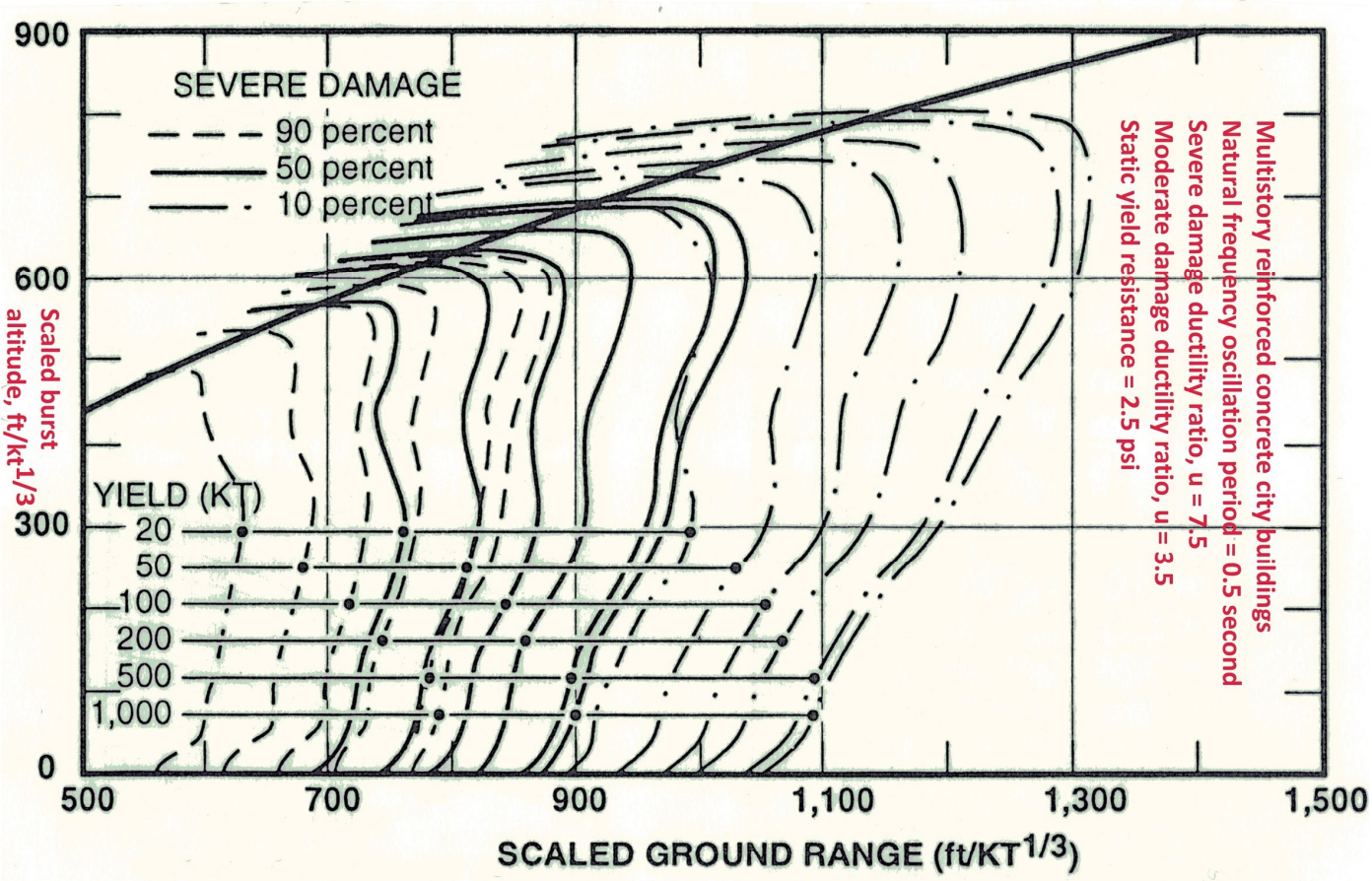


Figure 15.20. Moderate and Severe Isodamage Curves for Structure Category 15.2.12 for Yields Ranging From 20 KT to 1,000 KT.

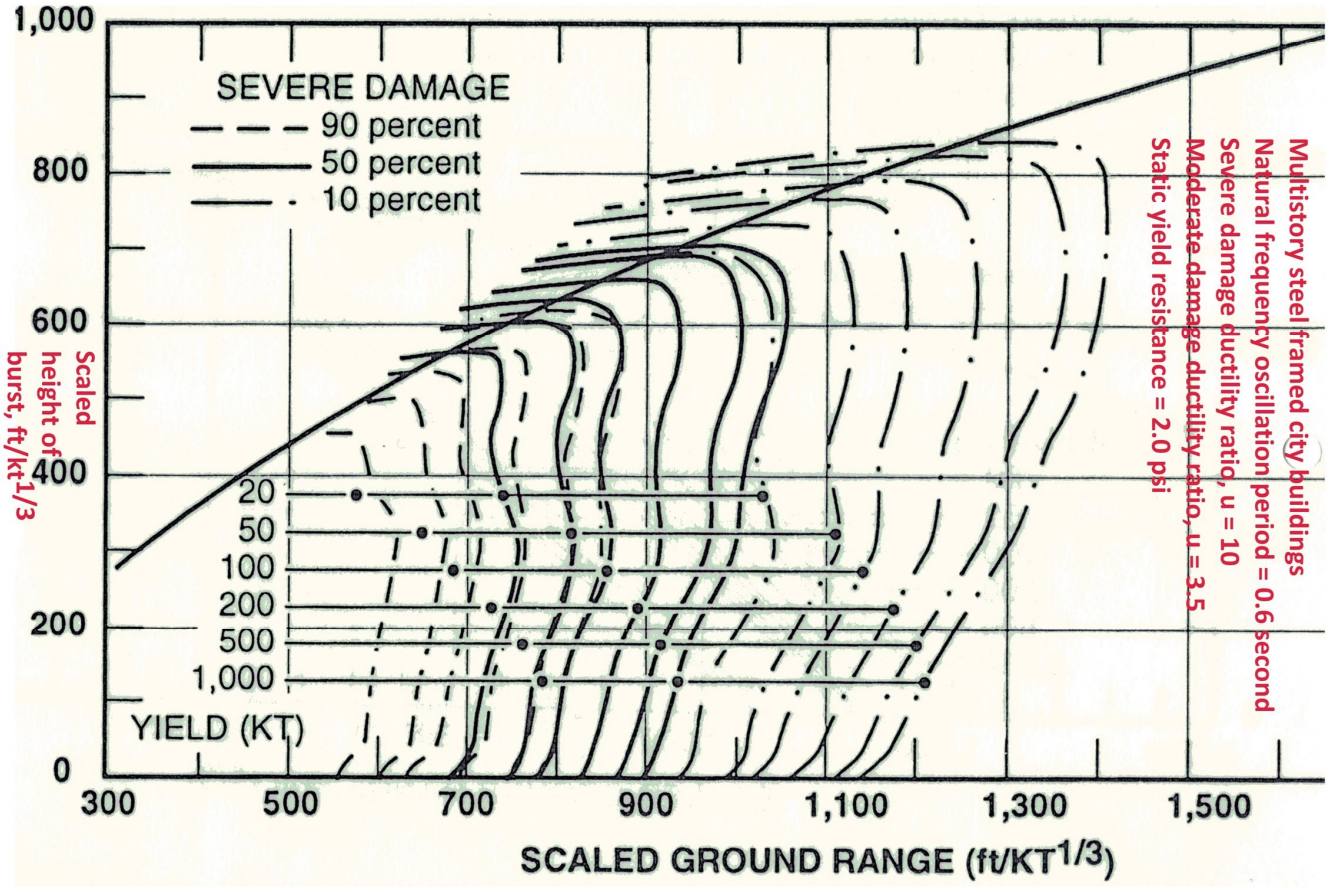


Figure 15.18. Moderate and Severe Isodamage Curves for Structure Category 15.2.10 for Yields Ranging From 20 KT to 1,000 KT.


2 November 1981
James Crabtree, architect
nuclear bomb shelters UK